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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,391	11/19/2001	Willem Van Schaik	P 284106 P-0293.000-US	8247

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EXAMINER

GURZO, PAUL M

ART UNIT PAPER NUMBER

2881

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/988,391

Applicant(s)

VAN SCHAİK ET AL.

Examiner

Paul Gurzo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-4 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 09/988,830. Although the conflicting claims are not identical, they are not patentably distinct from each other because 09/988,830 teaches a lithographic projection apparatus comprising a radiation system to supply a projection beam of electromagnetic radiation having a wavelength of 250 nm or less, a support structure adapted to support patterning structure which can be used to pattern the projection beam, a substrate table to hold a substrate, a projection system to project the patterned beam onto a target portion of the substrate, and a gas supply to supply a purge gas to a space in said apparatus that contains an optical component positioned to interact with the projection beam at a total pressure of 1×10^{-4} Pa to 1 Pa. They teach that the purge gas comprises an oxygen-containing species selected from water, nitrogen oxide, and oxygen-containing hydrocarbons, and these species obviously teach on the use of molecular oxygen.

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This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hase et al. (6,252,648) in view of Somekh (6,394,109).

Regarding claims 1-3, Hase et al. teach a projection apparatus comprising a light radiation system (6) for providing a projection beam of electromagnetic radiation having a wavelength of 250 nm or less, a support structure (obvious element of an exposure apparatus) for supporting a reticle (3) which can be used to pattern the projection beam according to a desired pattern, a substrate table (obvious element of an exposure apparatus) to hold a substrate (4), a projection lens (5) for projecting the patterned beam onto a target portion of the substrate, a gas supply (8a, 10a) constructed and arranged to supply a purge gas to a space in the exposure apparatus, the space containing an optical component, wherein the purge gas comprises an amount of oxygen having a predetermined concentration (not greater than a few grams per 1 m^3) (col. 4, lines 45-49 and Fig. 1).

648 further teaches the purge gas comprising inert gas such as helium, argon, nitrogen or a mixture thereof (claim 5). 648 does not explicitly teach the claimed total partial pressure range. However, 109 teaches a method and apparatus for removing the contaminating object

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formed on the surface of components in lithography exposure apparatus using a cleaning object including an oxygen gas (216) to remove the contaminants. 109 teaches the oxygen "may be sources from any oxygen containing compounds, such as O₃, N₂O, water vapor...and other like compounds that are either neutral or ionized" (col. 5, lines 42-50) wherein the flow rate and pressure of the oxygen containing species are predetermined. This provides a clear suggestion that it would have been obvious to a skilled artisan to determine the proper pressure and proper amount of containing in the purge gas to achieve a highly effective apparatus of cleaning optical elements in the exposure device. In view of the teachings, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate these teachings to obtain the invention as claimed for the purpose of cleaning the optical components in the lithographic apparatus and improving the quality of the imaging system. Also, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hase et al. (6,252,648), in view of Somekh (6,394,109), and further in view of Akagawa et al. (6,288,769).

Regarding claim 4, 648 discloses substantially all basic features of the instant claims except for supplying an electromagnetic field having a wavelength of 250 nm or less for removing the contaminants. However, this technique is well known per se. For example, 769 teaches using ArF light of light beams having wavelength of 185 nm for removing the contaminating material formed on an optical unit (col. 9, lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the

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radiation source having the desired wavelength into the exposure device for the purpose of cleaning optical components to improve the quality of images to be printed.

Response to Arguments

Applicant's arguments filed July 11, 2003 have been fully considered but they are not persuasive.

In response to the applicant's argument that Hase and Somekh cannot be combined and "the rejection is simply the result of impermissible picking and choosing of various elements, based solely on Applicant's disclosure as a blueprint", the Examiner respectfully disagrees. Applicant is reminded that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Also, it has been held that it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

As discussed in the prior action, Hase teaches an exposure apparatus comprising a radiation system (6) for providing a projection beam of electromagnetic radiation having a wavelength of 250 nm or less and a gas supply (8a, 10a) to supply a purge gas to a space in the exposure apparatus, the space containing an optical component, wherein the purge gas comprises

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an amount of oxygen having a predetermined concentration (col. 4, lines 45-49). Hase teaches the purge gas comprising inert gas such as helium, argon, nitrogen or a mixture thereof (claim 5). Therefore, Hase clearly teaches a lithographic projection apparatus with "a gas supply to supply a purge gas to a space in said apparatus, said space containing an optical component positioned to interact with the projection beam" as claimed in claim 1. Further, Somekh teaches the oxygen "may be sources from any oxygen containing compounds, such as O₃, N₂O, water vapor...and other like compounds that are either neutral or ionized" (col. 5, lines 42-50) wherein the flow rate and pressure of the oxygen containing species are predetermined.

The issue is whether one having ordinary skill in the art would view this teaching to include the claimed pressure range. First, in light of such teachings, it would have been obvious to one of ordinary skill in the art to select the "purge gas comprises molecular oxygen" of Hase from "water, nitrogen oxide and oxygen-containing hydrocarbons" as suggested by Somekh to obtain the present invention for removing contaminants. Second, Somekh goes on to teach that the selection of the oxidizer must be made keeping in mind that the oxidizer should not corrode or damage other components of the lithography system (col. 5, lines 52-55). In addition, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Therefore, these teachings provide clear suggestion that it would have been obvious to a skilled artisan to determine the proper pressure and proper amount of containing in the purge gas to achieve a highly effective apparatus of cleaning optical elements in the exposure device.

Conclusion

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THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Gurzo whose telephone number is (703) 306-0532. The examiner can normally be reached on M-Thurs. 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on (703) 308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

PMG
July 28, 2003


JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800